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NOAA SSC

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Re: Oil Sample from Mystery Spill #448

INTRODUCTION

One (1) tarball/ oil sample was collected by the MSO Miami from a beach located on the Florida Coastline was received at the Louisiana State University Response laboratory on 09 August 2000. The tarball/ oil sample was diluted and analyzed for petroleum content. Table 1 gives a description of the samples sent to LSU by MST[2] Jeff Lovett (USCG) and the LSU identification number given at the time the sample was logged in at LSU.

Table 1. MSO Miami Identifications and LSU Identifications

MSO Miami	Collection Site	Time	LSU ID#	Instrument ID
Tarball from Golden Beach	239 Ocean Blvd, Golden Beach, Florida	1030 hours Local time	2N0222-01	ED0222C

METHODOLOGY

One gram of the tarball/ oil sample was weighed and transferred into a 45-ml VOA vial. Anhydrous sodium sulfate was added to the vial and then covered with 40 ml of dichloromethane (DCM). The VOA vial was capped and placed on an orbital shaker for 10 minutes to facilitate extraction.

One milliliter of the sample was then transferred, using a 1 ml Hamilton gas tight syringe, (rinsed three times with DCM between each sample), into a 2 ml autosampler vial. The sample was capped with a PTFE/Aluminum crimp cap. The diluted tarball/ oil sample, calibration standard, and reference oil (North Slope Crude Oil) were then analyzed on a

Hewlett Packard 5890 Series II Gas Chromatograph coupled with a Hewlett Packard 5971 Series Mass Selective Detector operated in selected ion monitoring mode.

The original tarball/ oil sample and the extract of the tarball/ oil sample was stored in a freezer for future reference.

RESULTS AND DISCUSSION

GC/MS analysis and interpretation of sample 2N0222-01 indicates that this tarball/ oil is a highly weathered intermediate fuel oil, slightly aromatic with a normal alkane range between C14 and C34. Sample 2N0222-01 contained light amounts of PAHs normally associated with oil and fuel toxicity. A quantitative polynuclear aromatic hydrocarbon (PAH) analysis showed the sample contained approximately 200 ppb of total PAHs.

As far as human health risks are concerned, the respiratory threat from the tarballs/oil should be minimal due to the low concentrations of volatile compounds. For most people occasional brief skin contact with a small amount of weathered oil or tarballs, while not recommended, will do no harm. However, some people are hypersensitive to chemicals, including the hydrocarbons found in crude oil and refined fuel products. They may have an allergic reaction or develop rashes even from brief contact with oil. Therefore, it is recommended that tarball contact with skin should be avoided due to the light to moderate presence of PAHs. It is also advised that proper protective clothing be worn when dealing with any oil based material.

Figure 1, on the following page, is the GC/MS TIC fingerprint for the Golden Beach Tarball.

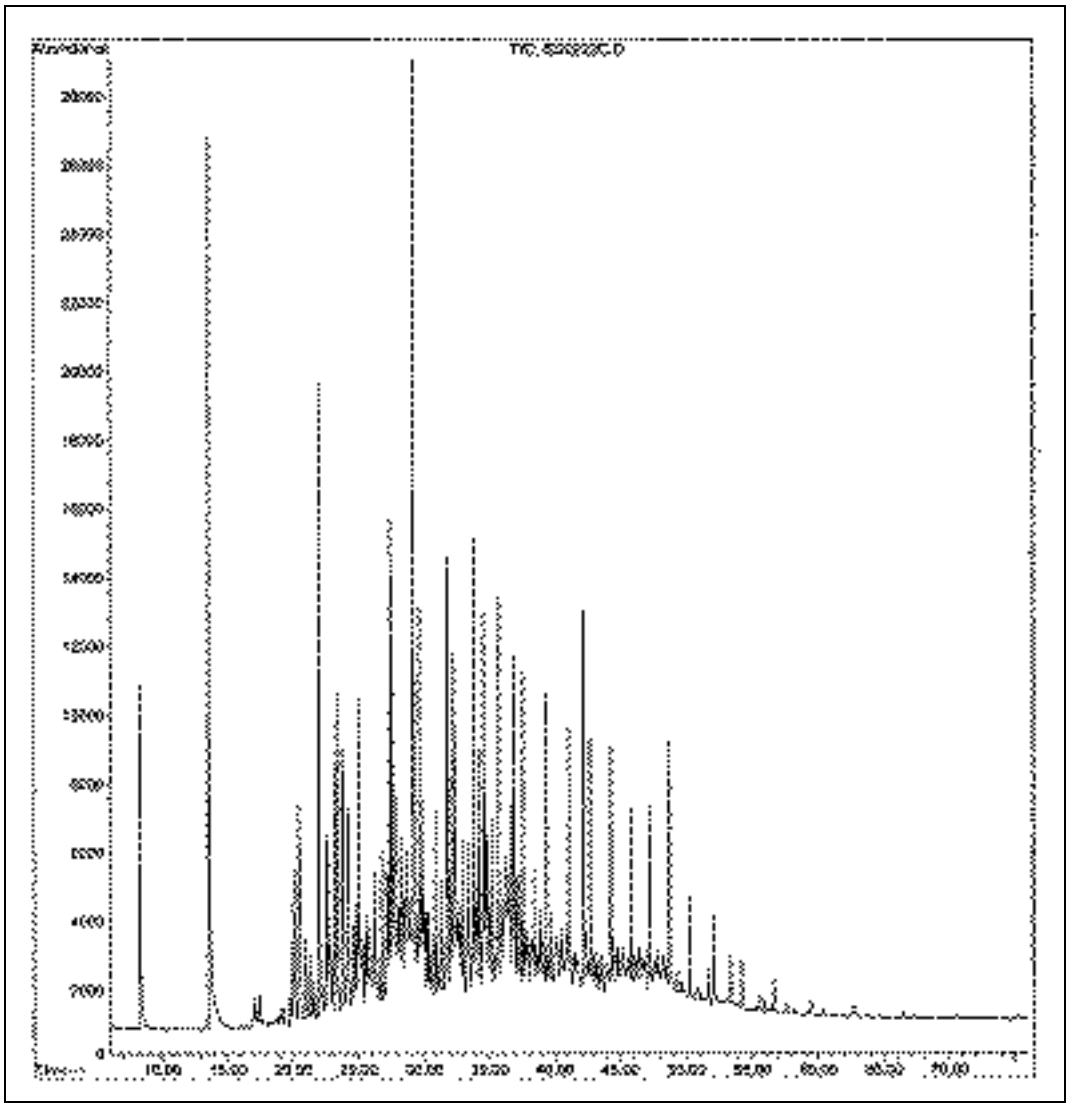

Figure 1. GC/MS TIC Fingerprint for Golden Beach, Florida Tarball